California Regional Water Quality Control Board
Central Valley Region
Robert Schneider, Chair

Dan Skopec
Acting Secretary

Arnold Schwarzenegger
Governor

Sacramento Main Office
11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
http://www.waterboards.ca.gov/centralvalley

19 May 2006

Mr. Parry Klassen
East San Joaquin Water Quality Coalition
1201 L Street
Modesto, CA 95354

REVIEW AND COMMENTS ON EAST SAN JOAQUIN WATER QUALITY COALITION SEMI-ANNUAL REPORT OF MONITORING AND OUTREACH ACTIVITIES

On 3 January 2006, staff of the Central Valley Regional Water Quality Control Board (Central Valley Water Board) received the 31 December 2005 *East San Joaquin Water Quality Coalition Semi-Annual Report of Monitoring and Outreach Activities* (SAMR) submitted by Dr. Michael Johnson on behalf of the East San Joaquin Water Quality Coalition (Coalition). Central Valley Water Board staff performed an administrative review of the SAMR and on 24 February, sent an email to the Coalition with attached preliminary comments based on that review. The email requested responses to comments by 7 March. Staff only received a response to the first comment in the attachment, but none of the others.

Attached is a memorandum with comments on the SAMR, including those in the 24 February email and attachment for which no responses have been received. Below is a list of the major issues identified in the SAMR that the Coalition must address in order to fully comply with the Conditional Waiver program.

- Monitoring efforts were incomplete. The Coalition did not meet the minimum monitoring requirements for flow, sediment toxicity, 303(d) pollutants, and prohibited pesticides.
- The Coalition did not meet the minimum requirements for follow-up sampling after significant toxicity was observed.
- The Coalition did not meet the requirements for load calculations.
- The Coalition did not submit Exceedance Reports for many of the water quality exceedances that occurred in 2005.
- Actions taken to identify and address water quality issues identified through monitoring were inadequate.
- The Coalition discontinued monitoring at a site with known water quality problems, despite staff direction otherwise.

- The Coalition did not meet the requirement to submit a summary and evaluation of management practice surveys conducted during the SAMR time period.

- The Coalition's evaluation of progress towards meeting the five objectives of the Coalition Monitoring Program, which are listed in the SAMR, was inadequate.

The Coalition has proposed studies to evaluate EC, TDS, and *E. coli* in the Coalition area. Central Valley Water Board staff supports the implementation of these studies, but has not received the proposal(s) or results for these proposed studies. The Coalition needs to submit the proposal and/or study results for staff review.

Central Valley Water Board staff recognizes that the Coalition is undertaking an important task by implementing the requirements of the Irrigated Lands Conditional Waiver Program, and improvements have been made along the way. However, in order for Dischargers who are members of a Coalition Group to have Report of Waste Discharges and Waste Discharge Requirements conditionally waived, the Coalition Group of which they are members must be in compliance with the Conditional Waiver's terms and conditions. In order for the Coalition Group to fulfill this responsibility and to continue providing coverage to its member Dischargers, it must be compliant with all aspects of the Conditional Waiver Program.

By **19 June 2006**, please submit a Semi-Annual Report Addendum to respond to the comments in the attached memorandum. If there are any questions regarding this review, please contact Ms. Dana Kulesza at (916) 464-4847 or by email at dkulesza@waterboards.ca.gov.

Original signed by Wendy L. Cohen

WENDY L. COHEN
Senior Engineer
Policy and Planning Unit

Original signed by L. Dana Kulesza

L. DANA KULESZSA
Environmental Scientist
Policy and Planning Unit

Attachment

cc: Dr. Michael Johnson, University of California, Davis

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Arnold Schwarzenegger
Governor

TO: Ms. Wendy Cohen, Chief
Policy and Planning Unit
Irrigated Lands Program

FROM: Ms. Dana Kulesza
Environmental Scientist
Policy and Planning Unit

SIGNATURE: *Original signed by Dana Kulesza*

DATE: 19 May 2006

SUBJECT: REVIEW OF SEMI-ANNUAL MONITORING REPORT – EAST SAN JOAQUIN WATER QUALITY COALITION

Staff Review

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) received the Irrigation Season 2005 Semi-Annual Monitoring Report (SAMR) for the East San Joaquin Water Quality Coalition (Coalition) on 3 January 2006. The Coalition submitted this report to meet the conditions of Resolution No. R5-2003-0105 and the associated *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands* (Conditional Waiver) adopted by the Central Valley Water Board on 11 July 2003.

Central Valley Water Board staff has performed a review of the SAMR to evaluate the document for compliance with the requirements in the Conditional Waiver's Monitoring and Reporting Program (MRP) for Coalition Groups and the conditions in the Coalition's MRP Plan and Quality Assurance Project Plan (QAPP), and to assess the quality of the data generated and the conclusions and recommendations presented. The review has been broken into three major categories: 1) comments on administrative issues; 2) comments on analytical issues; and 3) comments on other major issues.

Comments on Administrative Issues

The Coalition's SAMR was submitted on time and generally included the major components required by the Conditional Waiver. Sampling was performed at 13 sites in seven sampling events, and the samples collected were analyzed for the required constituents. Sampling sites were identified and justified through site descriptions, and future sites were outlined as well. Data was summarized according to monitoring constituent and sampling site. Overall the structure and format of the report is functional and meets most expectations. However, the SAMR had several administrative deficiencies, as follows.

Item 1: The authorized Coalition Group Representative did not sign the SAMR cover letter. Parry Klassen, who is currently listed in the NOI as the Coalition Group Representative, must either (a) sign the report's cover letter, or (b) submit an amended NOI that adds or transfers the responsibility for monitoring and reporting to Mike Johnson, thereby granting him report-signing authorization. At the meeting held on 4 May 2006, Parry Klassen stated that the Coalition would submit this authorization documentation, but to date, staff has not received it.

Item 2: The SAMR did not contain an introductory section summarizing the purpose and scope of the report, the time frame covered by the report, or the general findings, accomplishments, and pending issues that occurred during this time.

Item 3: Quality control (QC) results were provided in a semi-tabulated format; however, the usability of the tables could be greatly improved. Column titles should be provided on each page, and all cell contents should be clearly separated from adjacent cell contents; all abbreviations should be defined. There should be an "expected value" column within the table, which would store such information as the chemical spike concentration for the laboratory control spikes (LCS), matrix spikes (MS), and the result of the original analysis for sample duplicates, LCS duplicates, and MS duplicates. This comment was also in the AMR staff review letter dated 12 September 2005 to the Coalition. There should also be columns for qualifiers, PQLs, and MDLs.

Item 4: There are several documents related to exceedances provided in the SAMR that staff did not receive. There were two Exceedance Reports (each dated 18 October 2005), two follow-up Exceedance Reports (dated 8 August 2005 and 16 September 2005), and two Communication Reports (dated 26 September 2005 and 3 October 2005). In addition, there was one Communication Report in the SAMR that was different from the version we received; the SAMR version was dated 17 October 2005 while the version we received was dated 19 October 2005, and the "Anticipated Completion Date" chart on page two had different dates in each version of the Communication Report. Exceedance Reports must be sent promptly to staff when significant toxicity is detected or a water quality objective is exceeded. Communication Reports must be submitted no later than 45 business days from the date of the Exceedance Report.

Item 5: During 2005 there were numerous instances when an Exceedance Report should have been submitted for water quality exceedances but was not. Six of the 11 tests found to be significantly toxic to *Hyalella* were not reported. There were 14 dissolved oxygen exceedances at five sites over the year; none were reported in an Exceedance Report. Additionally, 17 of the 42 *E. coli* exceedances were not reported, four of the 14 electrical conductivity exceedances were not reported, and six of the 14 total dissolved solids exceedances were not reported.

Item 6: The SAMR's description of the Coalition area on page six does not match the map of the Coalition area in Figure 1. For instance, the entire Calaveras County is shown on the map within Coalition boundaries, while the text states that only a portion of the county is in the Coalition. Also, the text states that all of Madera County is within Coalition boundaries but the map only shows coverage of approximately half of the county. In addition, the sections to the

east of the San Joaquin River that are covered by the Westside Coalition are shown within the Coalition boundaries on the map. The Coalition needs to provide consistent and accurate information regarding Coalition coverage areas.

Item 7: The SAMR did not include a map of the Coalition area showing the locations of all monitoring sites. This map should accompany the detailed maps of each site, which were included.

Item 8: Total irrigated acres were incorrectly estimated in the first paragraph. Table 1 lists the total irrigated land area as 1,188,900 acres, which would accurately be estimated as 1,200,000 acres instead of the 1,100,000 acres stated in the first paragraph. The Coalition needs to provide consistent and accurate information regarding coverage areas.

Item 9: Major water bodies of the Coalition area that are listed on page 6 should include the San Joaquin River.

Item 10: Future tense was used to discuss how dormant and irrigation season monitoring occur (page 9). The text seemed to be referring to future monitoring; there should have been a section which discussed how monitoring was conducted for the time period that this report covers.

Item 11: References for Figures 1-14 and Tables 3-6 are missing.

Item 12: A definition and description of “Rotating Sites” is missing. This should have included information on how often these sites were rotated and why, and the rationale of having some rotating sites and some core sites.

Item 13: The tabulated results had no units labeled for any of the constituents.

Item 14: The tabulated results list the acronym “ND” for many of the results. The Coalition should either provide these results as less than the method detection limit (e.g., <0.02 µg/l), or have a column next to the “ND” column that lists the MDL for that analysis.

Item 15: Abbreviations used in the summary toxicity tables for qualifying the data were not defined until much later in the report (NSG, SL, SG). Definitions of acronyms used in tables should be provided as footnotes to the table, or the Coalition should provide a master list of acronyms in the Table of Contents. In addition, there were no units given for the last four columns of the toxicity exceedances table, so staff cannot interpret all aspects of the table.

Item 16: The water column and sediment toxicity results were provided in percent survival, but the algae toxicity was provided in cell count. The cell count information is not useful without the cell count of the control. The Coalition needs to provide algae toxicity results as percent reduction.

Item 17: The sediment toxicity result for Dry Ck @ Wellsford Rd, collected 7/13/05, was entered incorrectly as a decimal in the table on page 77, based on the original lab report.

Item 18: The March 2005 sample date for Merced River @ Santa Fe Drive was reported as 21 March in the SAMR, while on the 6 April Exceedance Report the sample date was reported as 22-23 March 2005. The sample date is recorded on the chain of custody (COC) forms as 21 March.

Item 19: There were many duplicate copies of the same COC forms in the report. This made it hard to review the COC forms because of time spent sorting out duplicates. The SAMRs need only include one set of COC forms for each sampling event.

Item 20: Surrogate % Recovery data was provided in the Tabulated Data section. This information would be most easily accessed if it were provided in the QC Results section. In addition, the acceptable range(s) for the recoveries (needed to compare the values) are not included. Acceptable ranges must be included with the surrogate recovery results.

Item 21: The quality control samples provided in the Associated Laboratory and Field QC Results section did not include acceptable ranges to compare the results, such as for the surrogates, percent recovery, and relative percent difference (RPD). In addition, the section did not provide the original and duplicate sample to verify that the RPD listed was accurate. Furthermore, there was no discussion in this section about how the quality control samples might affect the sampling results and whether any sampling results were qualified, such as qualified estimated, based on the quality control results.

Item 22: Page numbers must be given for all pages of appendices in the laboratory reports. The toxicity reports, ranging from 100-300 pages, were provided electronically in PDF format. These reports each included a Table of Contents with page numbers for only the first few pages of the report. Page numbers were not provided for the appendices, which contain all raw laboratory data, and which constitute the bulk of the report. Referencing lab data was thus extremely difficult.

Item 23: Page 231 of the SAMR states that a QAPP amendment was submitted to address the percent recovery limits requested by the Central Valley Water Board staff in the 12 September 2005 AMR review letter. Central Valley Water Board staff did not receive a QAPP amendment related to this issue.

Item 24: Table 12 on pages 239-240 lists a TDS exceedance of 760 mg/L at Highline Canal @ Lombardy Rd on 3/21/05. This is contrary to the data summary for this monitoring site on page 41, which lists the TDS value for this date as 260 mg/L. Staff cannot verify the correct value, because TDS laboratory original data sheets were not provided. The Coalition needs to submit these data sheets in a timely fashion, and verify the correct TDS result.

Item 25: The start and end dates for each TIE must be provided in the data summary portion of the SAMR, along with the date significant toxicity was observed and the sample collection date. This was not included anywhere in the report; staff had to refer to the raw lab reports to look this up, and this information was difficult to locate because page numbers were not provided for the lab report appendices. The TIE start date and initial significant toxicity detection date are important pieces of information when interpreting the toxicity results.

Item 26: There are five objectives listed on page 8 as the Monitoring Objectives, but the report does not contain an evaluation of whether these monitoring objectives were met. Although some are long-term objectives, the Coalition must still discuss the progress the Coalition has made towards achieving the objectives.

Item 27: The pesticide data summary tables in the SAMR did not include a column to qualify the results detected between the PQL and the MDL as estimates. The Coalition must include this information in the SAMRs.

Item 28: Table 34 lists the outreach and education activities with the estimated number of attendees. However, the narrative discussing these activities would better support it with a discussion of feedback from attendees, amount of time at the meetings devoted to discussing management practices, and outcomes.

Comments on Analytical Issues

Chemical analyses of samples collected for the SAMR were generally run in accordance with the methods prescribed in the Conditional Waiver. This review of the analytical results presented in the SAMR is broken down into the following categories: analytical parameters, toxicity testing; pesticide testing; and quality control findings.

Item 29: The following table shows the exceedances for analytical parameters and whether an Exceedance Report was submitted. The Coalition needs to submit Exceedance Reports in a timely manner, as specified in MRP Order No. R5-2005-0833.

Sample Date	Exceed-ance Report	Location	Analyte	Result	Water Quality Limit	Source of Water Quality Limit
07/12/05	NO	Ash Slough @ Ave 21	Chlorpyrifos	0.018	0.015 µg/L	Freshwater Aquatic Life Protection, Continuous Concentration, 4-day average, Calif. Dept. of Fish & Game (CDFG)
08/16/05	NO	Ash Slough @ Ave 21	Chlorpyrifos	0.046		
07/12/05	YES	Cottonwood Creek @ Rd 20	Chlorpyrifos	0.026		
07/12/05	NO	Duck Slough @ Pioneer Rd	Chlorpyrifos	0.018		
02/15/05	NO	Highline Canal @ Lombardy Rd	Chlorpyrifos	0.018		
02/15/05	YES	Hilmar Drain @ Central Ave	Conductivity	1102	700 µS/cm	Agricultural Water Quality Limit (Ayers & Westcott) Beneficial Use = Agriculture
03/22/05	YES	Hilmar Drain @ Central Ave	Conductivity	1157		
05/11/05	YES	Hilmar Drain @ Central Ave	Conductivity	1354		
05/19/05	YES	Hilmar Drain @ Central Ave	Conductivity	1214		
06/15/05	NO	Hilmar Drain @ Central Ave	Conductivity	855		
07/13/05	NO	Hilmar Drain @ Central Ave	Conductivity	826		
08/16/05	NO	Hilmar Drain @ Central Ave	Conductivity	788		
02/15/05	YES	Prairie Flower Drain @ Crows Land Rd	Conductivity	2561		
03/22/05	YES	Prairie Flower Drain @ Crows Land Rd	Conductivity	2568		
05/11/05	YES	Prairie Flower Drain @ Crows Land Rd	Conductivity	3168		
06/15/05	YES	Prairie Flower Drain @ Crows Land Rd	Conductivity	1705		
07/13/05	YES	Prairie Flower Drain @ Crows Land Rd	Conductivity	1723		
08/17/05	YES	Prairie Flower Drain @ Crows Land Rd	Conductivity	1779		
09/21/05	NO	Prairie Flower Drain @ Crows Land Rd	Conductivity	791		

Sample Date	Exceed-ance Report	Location	Analyte	Result	Water Quality Limit	Source of Water Quality Limit
03/21/05	NO	Bear Creek @ Kibby Rd	Dissolved oxygen	4.4	7.0 mg/L	Freshwater Aquatic Life Protection. USEPA. Beneficial Use = Spawning
03/21/05	NO	Cottonwood Ck @ Rd 20	Dissolved oxygen	5.6		
06/14/05	NO	Cottonwood Ck @ Rd 20	Dissolved oxygen	5.7		
07/12/05	NO	Cottonwood Ck @ Rd 20	Dissolved oxygen	5.17		
09/20/05	NO	Cottonwood Ck @ Rd 20	Dissolved oxygen	6.5		
06/15/05	NO	Dry Creek @ Wellsford Rd	Dissolved oxygen	5.9		
07/13/05	NO	Dry Creek @ Wellsford Rd	Dissolved oxygen	5.7		
09/21/05	NO	Dry Creek @ Wellsford Rd	Dissolved oxygen	6.98		
03/22/05	NO	Jones Drain @ Oakdale Rd	Dissolved oxygen	4.9		
07/12/05	NO	Jones Drain @ Oakdale Rd	Dissolved oxygen	5.98		
09/21/05	NO	Jones Drain @ Oakdale Rd	Dissolved oxygen	5.9		
03/22/05	NO	Prairie Flower Drain @ Crows Land Rd	Dissolved oxygen	6.5		
07/13/05	NO	Prairie Flower Drain @ Crows Land Rd	Dissolved oxygen	3.2		
09/21/05	NO	Prairie Flower Drain @ Crows Land Rd	Dissolved oxygen	5.22		
07/12/05	NO	Ash Slough @ Ave 21	*E.coli*	500	235 MPN/100ml	Water Quality Criteria for fecal coliforms, single-sample maximum. USEPA. Beneficial Use = Contact Recreation
Mar, May	YES	Bear Creek @ Kibby Rd	*E.coli*	2 exceedances		
Various	YES/NO	Cottonwood Creek @ Rd 20	*E.coli*	4 exceedances		
09/20/05	NO	Dry Creek @ Rd 18	*E.coli*	500		
Various	YES/NO	Dry Creek @ Wellsford Rd	*E.coli*	4 exceedances		
Various	YES/NO	Duck Slough @ Gurr Rd	*E.coli*	6 exceedances		
Mar, May	YES	Duck Slough @ Pioneer Rd	*E.coli*	2 exceedances		
05/10/05	YES	Highline Canal @ Lombardy Rd	*E.coli*	240		
Various	YES/NO	Hilmar Drain @ Central Ave	*E.coli*	7 exceedances		
Various	YES/NO	Jones Drain @ Oakdale Rd	*E.coli*	5 exceedances		
Various	YES/NO	Lone Willow Slough @ Madera Ave	*E.coli*	3 exceedances		
Various	YES/NO	Prairie Flower Drain @ Crows Land Rd	*E.coli*	6 exceedances		
06/14/05	NO	Lone Willow Slough @ Madera Ave	permethrin	0.23	0.03 µg/L	Freshwater Aquatic Life Protection. CDFG.
08/16/05	YES	Dry Creek @ Rd 18	pH	6.48	6.5-8.5	Drinking Water Standard, Secondary MCL. USEPA. Beneficial Use = Municipal
03/21/05	YES	Highline Canal @ Lombardy Rd	pH	8.56		
08/17/05	YES	Highline Canal @ Lombardy Rd	pH	6.46		
03/22/05	YES	Jones Drain @ Oakdale Rd	pH	8.58		
06/14/05	YES	Lone Willow Slough @ Madera Ave	pH	6.34		
03/22/05	YES	Dry Creek @ Wellsford Rd	pH	8.96		
05/11/05	YES	Dry Creek @ Wellsford Rd	pH	6.26		
08/17/05	YES	Dry Creek @ Wellsford Rd	pH	9.18		
08/17/05	YES	Merced River @ Santa Fe	pH	6.38		
02/15/05	YES	Hilmar Drain @ Central Ave	TDS	740	450 mg/L	Agricultural Water Quality Goals (Ayers & Westcott) Beneficial Use = Agriculture
03/22/05	YES	Hilmar Drain @ Central Ave	TDS	760		
05/11/05	YES	Hilmar Drain @ Central Ave	TDS	740		
06/15/05	YES	Hilmar Drain @ Central Ave	TDS	720		
07/13/05	NO	Hilmar Drain @ Central Ave	TDS	600		
08/16/05	NO	Hilmar Drain @ Central Ave	TDS	500		
09/21/05	NO	Hilmar Drain @ Central Ave	TDS	690		
02/15/05	YES	Prairie Flower Drain @ Crows Land Rd	TDS	1600		
03/22/05	YES	Prairie Flower Drain @ Crows Land Rd	TDS	1600		

Sample Date	Exceed-ance Report	Location	Analyte	Result	Water Quality Limit	Source of Water Quality Limit
05/11/05	YES	Prairie Flower Drain @ Crows Land Rd	TDS	1600		
06/15/05	YES	Prairie Flower Drain @ Crows Land Rd	TDS	1300		
07/13/05	NO	Prairie Flower Drain @ Crows Land Rd	TDS	1100		
08/17/05	NO	Prairie Flower Drain @ Crows Land Rd	TDS	990		
09/21/05	NO	Prairie Flower Drain @ Crows Land Rd	TDS	460		

Item 30: The following table lists the toxicity tests which should have triggered follow-up actions, such as a Toxicity Identification Evaluation (TIE) and/or resampling, and whether an Exceedance Report was submitted and the follow-up actions taken. The Coalition needs to conduct TIEs and other follow-up actions in a timely manner, as specified in MRP Order No. R5-2005-0833.

Sample Date	Exceed-ance Report	Location	Species	Result	Dilution Series	TIE	TIE results	Sample up-stream	Site re-sample	Re-sample results
05/10/05	YES	Bear Creek @ Kibby Rd	*Cerio*	5% survival	NA	YES	Inconclus.[1]	NO	YES	100% survival
07/12/05	NO	Duck Slough @ Gurr Rd	*Hyalella*	59% survival	NA	NA	--	NO	NO	--
09/20/05	NO	Duck Slough @ Gurr Rd	*Hyalella*	4% survival	NA	NA	--	NO	NO	--
02/16/05	NO	Duck Slough @ Pioneer Rd	*Pimephal*	65% survival[2]	NA	NA	--	NO	NO	--
07/12/05	YES	Duck Slough @ Pioneer Rd	*Selenast*	reduced growth	NA	NA	--	NO	YES	No tox
05/10/05	YES	Highline Canal @ Highway 99	*Cerio*	45% survival	NA	YES	Inconclus.[1]	NO	YES	0% survival
05/10/05	YES	Highline Canal @ Lombardy Rd	*Hyalella*	71% survival	NA	NA	--	NO	NO	--
07/12/05	YES	Highline Canal @ Lombardy Rd	*Hyalella*	reduced growth	NA	NA	--	NO	NO	--
08/17/05	YES	Highline Canal @ Lombardy Rd	*Selenast*	reduced growth	NA	NA	--	NO	YES	No tox
05/11/05	YES	Hilmar Drain @ Central Ave	*Cerio*	70% survival	NA	NA	--	NO	YES	95% survival
09/21/05	NO	Hilmar Drain @ Central Ave	*Hyalella*	31% survival	NA	NA	--	NO	NO	--
02/16/05	NO	Jones Drain @ Oakdale Rd	*Selenast*	reduced growth	NA	NA	--	NO	NO	--
08/17/05	YES	Jones Drain @ Oakdale Rd	*Cerio*	25% survival	YES	YES	Inconclus.[3]	NO	YES	95% survival
03/21/05	YES	Lone Willow Slough @ Madera A.	*Selenast*	reduced growth	NA	YES	Inconclus.[4]	NO	NO	--
05/10/05	YES	Lone Willow Slough @ Madera A.	*Hyalella*	53% survival	NA	NA	--	NO	NO	--
07/12/05	YES	Lone Willow Slough @ Madera A.[5]	*Cerio*	0% survival	NO	NO	--	NO	NO	--
03/21/05	YES	Merced River @ Santa Fe	*Selenast*	reduced growth[6]	NA	NA	--	NO	NO	--
07/12/05	YES	Prairie Flower Drain @ Crows L	*Hyalella*	reduced growth	NA	NA	--	NO	NO	--

[1]TIE began four days after the sample was collected and one day after toxicity observed; toxicity no longer present in sample water.
[2]Only two replicates were run (four are required). Variance in the replicates was high. Test did not meet acceptability criteria, although it was not reported as such.
[3]TIE began five days after the sample was collected and two days after toxicity observed; toxicity no longer present in sample water.
[4]TIE began eleven days after the sample was collected and eight days after toxicity observed; toxicity no longer present in sample water.
[5]The responsibility for this monitoring site was transferred to the Westside Coalition on 21 July 2005.
[6]Re-test did not show significant toxicity, so lab determined the original result was an anomaly.

Item 31: Reported results indicate that two of the eight analyte pesticides were detected on various days throughout the year. Item 29 identifies five detections of pesticides above the water quality limits, and Item 32 identifies eight additional detections of pesticides below the water quality limits. The Coalition determined chlorpyrifos exceedances using 0.02 µg/L, which is the California Department of Fish and Game (CDFG) Freshwater Aquatic Life Maximum Concentration, 1-hour average. However, the Coalition should use 0.015 µg/L, which is the CDFG Freshwater Aquatic Life Continuous Concentration, 4-day average to determine exceedances. Staff recognizes the Coalition's effort to determine the source(s) of all pesticide detections through PUR reports, regardless of exceedance status. Nevertheless, Exceedance Reports must be submitted and all required follow-up must occur for any detection of chlorpyrifos above 0.015 µg/L. Likewise, diazinon detections above 0.10 µg/L must be considered exceedances.

Item 32: This table shows detections of pesticides below water quality limits.

Comments	Sample Date	Location	Analyte	Result	PQL	MDL	Water Quality Limit	Source of Water Quality Limit
Not an Exceedance	07/12/05	Cottonwood Creek @ Rd 20	chlorpyrifos	0.012	0.05	0.00259	0.015 µg/L	Freshwater Aquatic Life Protection, CDFG
Not an Exceedance	02/15/05	Highline Canal @ Lombardy Rd	chlorpyrifos	0.01	0.05	0.0026	0.015 µg/L	
Not an Exceedance	07/13/05	Highline Canal @ Lombardy Rd	chlorpyrifos	0.011	0.05	0.00259	0.015 µg/L	
Not an Exceedance	02/15/05	Dry Creek @ Wellsford Rd	diazinon	0.011	0.05	0.0035	0.10 µg/L	Freshwater Aquatic Life Protection, CDFG
Not an Exceedance	02/15/05	Dry Creek @ Wellsford Rd	diazinon	0.013	0.05	0.0035	0.10 µg/L	
Not an Exceedance	02/15/05	Highline Canal @ Lombardy Rd	diazinon	0.098	0.05	0.0035	0.10 µg/L	
Not an Exceedance	02/16/05	Jones Drain @ Oakdale Rd	diazinon	0.011	0.05	0.0035	0.10 µg/L	
Not an Exceedance	07/13/05	Prairie Flower Drain @ Crows Landing Rd	diazinon	0.013	0.05	0.00353	0.10 µg/L	

Item 33: Table B-7, page 37, of the Coalition's QAPP lists quality control requirements for *E.coli* bacterial analysis. The table shows that field blanks, method blanks, lab duplicates, and negative and positive controls would be conducted with each sample batch. Staff recognizes that a field blank and field duplicate were conducted within all but one sampling event, but laboratory QA samples were not run with any of the batches. This same issue was also noted in the AMR staff review letter dated 12 September 2005 to the Coalition.

Item 34: The *E.coli* data assessment and interpretation did not include some of the significant potential sources of surface water contamination from *E.coli*. In addition to the potential sources already identified in the SAMR, the Coalition should consider runoff from manure or other fertilizer uses; use of reclaimed water for irrigation; runoff from animals used for weed-eating and soil turn-over; and runoff from grazing land that was converted to field or orchard. Attempting to correlate the locations and number of acres of irrigated pastures and dairies with the *E.coli* data is a good start, but this should also be done for other potential sources. The Coalition should include these potential sources in their *E.coli* special study to be performed in the 2006 irrigation season. The Coalition must also report *E.coli* exceedances for any sample

measured above 235 MPN/100mL, which is the ambient water quality criteria for a single-sample maximum of *E.coli* (USEPA) to protect contact recreation beneficial uses.

Item 35: The laboratory Practical Quantitation Limit (PQL) for cypermethrin, 0.10 µg/L, was above the MRP requirement of 0.05 µg/L.

Item 36: Permethrin was detected at 0.23 µg/L in the Lone Willow Slough sample collected in June. The Coalition did not consider it an exceedance because they stated that there are no water quality objectives for pyrethroids. The water quality limit for permethrin that protects freshwater aquatic life is 0.03 µg/L (CDFG), so a discussion of the permethrin exceedance should have been included. Evaluation of pesticide detections above water quality limits must be completed in order to identify and attempt to reduce the pesticide in surface waters.

Item 37: The Coalition considered dissolved oxygen results below 5.0 mg/L to be exceedances. However, all Coalition monitoring sites are either on surface waters with a Spawning beneficial use or are tributary to one. Therefore, the minimum dissolved oxygen level to determine exceedances is 7.0 mg/L.

Item 38: The Coalition considered electrical conductivity results above 450 µS/cm to be exceedances. However, the water quality limit which protects all beneficial uses in Coalition surface waters is 700 µS/cm. Therefore, the 469 µS/cm result from Highline Canal @ Lombardy Road on 2/15/05 is not an exceedance.

Item 39: TIEs must begin as soon as toxicity is detected at 50% or greater difference than the control. One of the four TIEs performed during 2005 was initiated eight days after significant toxicity was observed and 11 days after the sample was collected. The cause of the toxicity could not be determined in any of the four TIEs because toxicity was no longer present when the TIE was started. If the current procedures used for toxicity identification were not effective, than procedures must be improved and additional follow-up procedures must be implemented. For instance, evaluation of compliance with US EPA methods for hold times, sample storage, and test initiation times, as well as starting TIEs for problematic sites at the start of a toxicity test, may improve the effectiveness of TIEs.

Item 40: The last paragraph on page 247 states that chlorpyrifos was not detected in July at the Ash Slough site. However, the first paragraph of the same page is contradictory to this, describing the chlorpyrifos exceedance at this site in July. This conflicts with the August chlorpyrifos exceedance discussion, which should be re-interpreted and amended as needed.

Item 41: The “Pesticide Data Interpretation” section of the SAMR needs to include a list of pesticides analyzed (diazinon, chlorpyrifos, and six pyrethroids) to provide some perspective regarding the number of detects.

Item 42: The Coalition needs to review Pacific Eco Risk Laboratory’s conclusion that the February 2005 Duck Slough at Pioneer Road sample passed EPA test acceptability criteria and was not significantly toxic (65% survival of *Pimephales)*. Only two replicates of the sample water were run, and the *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (US EPA, 2002) specifies four replicates. The

site should have been re-sampled immediately and a new test run with four replicates. The Coalition must provide staff with an amended lab report that provides accurate information on the outcome of the test.

Comments on Other Major Issues

Certain aspects of Conditional Waiver requirements may not have been completely addressed in the Coalition's Watershed Evaluation Report, QAPP, and MRP Plan, and subsequently were not included in the SAMR. However, there are also deficiencies in the SAMR related to items that were addressed in these documents. In a 1 April 2005 letter, Central Valley Water Board staff required additional revisions in the WER, MRP Plan, and QAPP so they would fully comply with the Conditional Waiver Program before staff could consider final approval. These revisions included the modification of the Coalition's QAPP to include appropriate method detection levels and adjustment of the recovery ranges for specific constituents. At this time, the Central Valley Water Board staff has not received the revised documents. This comment was also in the AMR staff review letter dated 12 September 2005 to the Coalition.

In addition to the requirements set forth in the letter dated 1 April 2005, additional information and actions need to be undertaken at this time in order to fully comply with the Conditional Waiver. These actions include monitoring for 303(d)-listed constituents during Phase 1; conducting sediment toxicity sampling during the dormant season; improving the timeliness of TIEs; improving actions taken to identify and address water quality effects; improving flow monitoring and load calculations; submitting management plans for certain monitoring sites; conducting annual management practice surveys and evaluating the information collected; conducting Phase 1 monitoring for all pesticides listed in the Pesticide Implementation Plan of the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, *Fourth Edition* (Basin Plan), if used within the watershed; and improving the overall evaluation of the Coalition's program and monitoring results.

Item 43: The SAMR does not include a discussion of what the results show about the water quality in the watersheds sampled, whether data quality objectives were achieved, or whether the sampling locations are adequately characterizing the identified watersheds. The Coalition must evaluate the monitoring results and propose actions to improve the monitoring and water quality. Furthermore, the SAMR should include an overview of the data quality and whether any samples were or should have been qualified based on holding times, surrogate recoveries, laboratory control samples, matrix spike/matrix spike duplicate, replicate numbers, or other factors.

Item 44: Not all 303(d) pollutants were monitored. The Coalition did not monitor for ammonia, boron, DDT, Group A pesticides, and selenium, which were required at several sites.

Item 45: Sediment toxicity samples were not collected or analyzed for 2004-2005 dormant season. The Conditional Waiver requires at least one sample during the dormant season.

Item 46: Coalition Groups are required to implement a monitoring program to assess the sources and effects of waste in discharges from irrigated lands, and where necessary, to track

progress in reducing the amount of waste discharged that affects the quality of the waters of the state and its beneficial uses. The Coalition was only able to identify one pesticide application in the PUR reports to coincide with (and possibly be the attributable cause of) one of the 14 pesticide detections. Based on this, the reliance solely on PURs to identify the source of an exceedance has not proven effective. The Coalition must amend its follow-up, source identification procedures, and management practice implementation when necessary to protect water quality.

Item 47: Flow/discharge measurements are required at each site for each event, in order to allow for the calculation of load discharged for every waste parameter. These measurements should consist of channel dimensions and velocities taken at strategic points across the water body. Once these measurements are collected and recorded at each site the discharge should be calculated as a value of cubic feet per second. Flow measurements were reported for only 18 percent of site visits (flow data was not collected for 64 out of the 78 site visits). Calculated loads were not provided for any of the measured constituents, which is a requirement of the Conditional Waiver. In addition, the limited flow data was listed in a table under the section entitled “Organics-Surrogates % Recovery”, making it hard for the reader to locate the flow data in the report.

Item 48: The toxicity portion of the Summary of Precision and Accuracy section of the SAMR states that the Coalition collected follow-up samples within 72 hours for results that showed toxicity. There were 12 instances of significant toxicity where a follow-up sample was not collected (three *Selenastrum*, eight *Hyalella*, and one *Pimephales*). The SAMR provided explanations for why three of these follow-up samples were not collected (the three *Selenastrum* samples), but does not provide a rationale for not re-sampling in the other nine instances.

Item 49: The Coalition discontinued monitoring the August Road Drain upstream of Crows Landing Bridge, in spite of several water quality problems that occurred in July through September 2004 at the site. The exceedances included pesticides, TDS, EC, E.coli, and pH, which required continued monitoring and moving upstream in the watershed to identify the source(s). Staff requested pesticide use and management plan studies in the 12 September 2005 AMR review memo for this site, but this has not been submitted to date. The Coalition should have collected detailed information for the surrounding land areas and identified possible sources for water quality exceedances. This information should have been shared with the Central Valley Water Board and the landowners within the study areas to aid in the development of management plans within those areas. Discontinuing a monitoring site in spite of water quality exceedances requires the submittal of a revised MRP Plan with justification for the modification, as well as approval from the Executive Officer.

Item 50: In July 2004, the Coalition submitted a list of management practices that were used on the nine largest crops in the region. The SAMR referenced this list, but it was not updated as required by the Conditional Waiver. The report states that the current year's monitoring will guide them in surveying management practices. They did not survey growers at the last eight meetings held with growers, but state they plan on doing it at this year’s meetings.

The SAMR states that a goal for the Coalition is to understand the specific management practices used by growers in the watersheds. Although this is a long-term goal and Coalition actions performed to date were discussed on page 318, the SAMR should have evaluated the actions identified thus far by the Coalition that work towards this goal, which actions the Coalition proposes to continue, justification for the actions continued and not continued, and the proposal for additional actions towards the goal.

Item 51: The Coalition reported grower use of three of the five pesticides in the Pesticide Implementation Plan of the Basin Plan. These were listed in Appendix B of the SAMR, and include malathion, methyl parathion, and thiobencarb. The Conditional Waiver requires Phase 1 monitoring to include all pesticides listed in this Implementation Plan if used within the Coalition. The Coalition needs to revise the MRP Plan to include Phase 1 monitoring for these chemicals if used within the watersheds of the monitoring sites. This monitoring must begin during the 2006 irrigation season at the new Phase 1 sites, as applicable to specific sites.

Item 52: The SAMR Conclusions and Recommendations section should include more discussion to support the statements and provide more detail. For instance, one of the bullets states “The Data Quality Objectives were met”, but it is not clear what the data quality objectives were or how it was determined that they were met. The Coalition needs to provide substantive data for statements such as this.